REMARKS

The Final Office Action dated November 26, 2007 has been carefully considered and is appreciated. For the reasons discussed below in more detail, the Applicant respectfully traverses the rejections, and it is believed that this application is in condition for allowance. Accordingly, favorable reconsideration of the pending application is respectfully requested in view of the foregoing amendments and the following remarks.

Status of the Application

Claims 1-7, 9, 13-18, 21-27, 29, 32-37, 41, 44 are currently pending, with claims 1, 21, and 44 being amended. Claims 3, 22, and 32 are being canceled without prejudice. As the subject matter of the amended claims is fully supported by the application as filed, no new matter has been introduced into the Application by way of these amendments.

Summary of the Office Action

Claims 1-5 and 13-17 are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 6,044,150 to Rigstad et al. (hereinafter "Rigstad") in view of U.S. Publication No. 2003/0235184 to Dorenbosch et al. (hereinafter "Dorenbosch"). Claims 7, 9, and 18 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Rigstad in view of Dorenbosch and in further view of U.S. Patent No. 6,912,401 to Rosen et al. (hereinafter "Rosen"). Claim 6 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Rigstad in view of Dorenbosch and in further view of U.S. Publication No. 2003/0018472 to Hershkovits et al. (hereinafter "Hershkovits"). Claims 21-24, 32-35, 40, and 41 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Dorenbosch in view of Rigstad. Claim 23 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Dorenbosch in view of Rigstad and in further view of U.S. Patent No. 6,999,783 to Toyryla (hereinafter "Toyryla"). Claim 25 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Dorenbosch in view of Rigstad and further in view of Hershkovits. Claims 26, 27, 29, 36, and 37 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Dorenbosch in view of Rigstad and further in view of Rosen. Claim 44 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Rigstad in view of Dorenbosch.

Discussion

The subject matter of the present Application pertains generally to a system and method for talker arbitration based, in part, on prospective and/or current talker speech energy levels so as to remove the need for a user to push a separate button before commencement of speech, which facilitates natural dynamics associated with face-to-face conversations. More particularly, in addition to receiving speech energy levels corresponding to current and prospective talkers (or a plurality of prospective talkers), independent claims 1, 21, and 44, as amended, pertain to a half-duplex cellular communication session and recite: (a) receiving (or determining or maintaining) dynamic priority levels corresponding to each talker, (b) weighting the speech energy level for each talker by corresponding dynamic priority level, where (c) the dynamic priority level is based on a number of times a talker has been granted floor control and (d) the current and prospective talkers automatically request floor control by commencing speech. As discussed in more detail below, none of the cited references teach, expressly or inherently, weighting the speech energy level of each talker by a corresponding dynamic priority level.

INDEPENDENT CLAIMS 1, 21, 44

Independent claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rigstad in view of Dorenbosch. Claim 1 is reproduced below as follows:

> 1. In a half-duplex cellular communication system, a method for talker arbitration, comprising:
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> receiving speech energy levels corresponding respectively to a current talker and a prospective talker in a half-duplex cellular communication session, said current and prospective talkers automatically requesting floor control by commencing speech;
>
> receiving dynamic priority levels corresponding respectively to said current and prospective talkers;
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> selecting said prospective talker based on comparing said speech energy level of said prospective talker to said speech energy level of said current talker by weighting said speech energy levels by said corresponding dynamic priority levels;
>
> granting said selected prospective talker floor control of said half-duplex cellular communication session; and
>
> wherein each of said dynamic priority levels is based on a number of times each of said talkers has been granted floor control.

As amended, claim 1 is generally directed to a method of talker arbitration in a half-duplex cellular communication system, where the floor control is granted to a given talker by taking into account the talker's speech energy level weighted by the talker's dynamic priority level that is based on the number of times the talker has been granted floor control. Moreover, to facilitate a natural communication dynamic, each talker automatically requests floor control by commencing speech, thereby removing the need for a tactile scheme of pressing a button to initiate a floor request. *See* Application, p. 2.

Specifically, claim 1 recites (a) "receiving dynamic priority levels corresponding respectively to said current and prospective talkers," (b) "weighting said speech energy levels by said corresponding dynamic priority levels," where (c) "each of said dynamic priority levels is based on a number of times each of said talkers has been granted floor control." *See* Application at p.8. The dynamic priority level is used as ***one of multiple factors*** comprising a floor control decision. Specifically, it is evaluated in conjunction with a talker's speech energy level and serves to weight down the influence of naturally loud talkers on the floor control decision. *See* Application at p. 8. Thus, in order to equalize the floor control among a number of talkers with naturally different speech energy levels, each talker's speech energy level is weighted by a dynamic priority level that may be inversely proportional to the number of prior successful floor control attempts, for example by modifying each talker's speech energy value by their corresponding dynamic priority value and comparing the respective modified, or weighted, speech energy values among all talkers. *See* Application at p.8.

Rigstad describes a speakerphone that monitors received audio signal energy levels for making half-duplex switching decisions. *See* Rigstad, Abstract; col. 9, ll. 46-49. If the remote party's voice energy exceeds a predetermined threshold, then such party retains use of the channel and precludes the host from entering the conversation. Rigstad, col. 10, ll. 3-10. However, Rigstad relies solely on speech/voice energy monitoring for making half-duplex switching decisions and does not use priority levels for floor control. Therefore, contrary to requirements of claim 1, Rigstad does not, expressly or inherently, teach "weighting said speech energy levels by said corresponding dynamic priority levels."

Dorenbosch describes a method of communicating floor control messaging via RTP protocol message headers. *See* Dorenbosch, Abstract, par. [0040] . Unlike the Application, however, Dorenbosch is silent as to using dynamic priority in conjunction with additional factors in granting floor control. As stated in the Office Action, Dorenbosch, by itself and in combination with Rigstad, is missing the step of weighting speech energy levels by corresponding dynamic priority levels: "Rigstad et al. in view of Dorenbosch et al. do not specifically teach the weighting of the speech energy level with dynamic priority level." Office Action at p. 5. Instead, Dorenbosch discusses the use of a "round robin algorithm" as one example of several ***independent arbitration algorithms***. *See* Dorenbosch, par. [0049]. The "round robin" algorithm of Dorenbosch involves maintaining a record of the number of times each participant in a communication session has been granted the floor and granting the floor to the participant with the fewest number of grants. *See* Dorenbosch, par. [0049].

However, neither Dorenbosch, nor Rigstad, teach, expressly or inherently, the need to include additional factors to weight the speech energy levels. While the Office Action asserts that it would have been obvious "to weigh energy levels to a parameter such as a number of time[s] granted floor in order to include other factors when arbitrating floors such that the result is not biased towards one parameter and for robustness," *neither Dorenbosch, nor Rigstad teach, expressly or inherently, removal of bias toward any given floor control parameter or the use of multiple parameters, whether for "robustness" or otherwise*. Additionally, the Applicant respectfully requests a clarification for the source of the assumption that use of multiple parameters will necessarily result in a more "robust" floor control algorithm (as opposed to having more points of failure) and/or will remove bias (as opposed to introducing bias).

Furthermore, the Applicant notes that while claim 1 provides for automatically requesting floor control by commencing speech, Dorenbosch requires the user to "depress a key on a keypad" to initiate a floor reservation request. *See* Dorenbosch, par. [0042].

The remaining references, Rosen, Hershkovits, and Toyryla, likewise do not expressly or inherently teach or suggest weighting speech energy levels by dynamic priority levels that are based on the number of times a talker has been granted floor control.

Independent claims 21 and 44 are also rejected as being unpatentable over a combination of Rigstad and Dorenbosch. Claims 21 and 44 both recite weighting the speech energy level for

each talker by a corresponding dynamic priority level and, therefore, should be patentable for at least the same reasons as independent claim 1.

DEPENDENT CLAIMS 13, 33, 41

Dependent claims 13, 33, and 41 include preventing a prospective talker from obtaining floor control if the number of times the prospective talker has been granted floor control exceeds a threshold.

While dependent claims 13, 33, and 41 incorporate all of the requirements of their respective independent claims 1 and 21 and, therefore, are also patentable for at least the same reasons, the Applicant further notes that the Office Action relies on the "round robin" algorithm discussed in paragraph [0049] of Dorenbosch for both the "threshold" of claims 13, 33, 41 and the "dynamic priority" of claims 1, 21, and 41. The "round robin" algorithm of Dorenbosch requires a relative comparison of the number of times a given talker has been granted floor control with respect to the other talkers, while a "threshold" of claims 13, 33, and 41 is a predetermined cutoff, set at a server, representing the maximum number of times a participant can be granted floor control irrespective of the number of floor control grants relative to the *other* talkers. *See* Application, page 7. Therefore, Dorenbosch does not teach, expressly or inherently, preventing a prospective talker from obtaining floor control if the number of times the prospective talker has been granted floor control exceeds a threshold.

DEPENDENT CLAIMS 2-7, 9, 14-18 and 22-27, 29, 32, 34-37

Dependent claims 2-7, 9, 14-18 and 22-27, 29, 32, 34-37 incorporate all of the requirements of their respective independent claims 1 and 21 and, therefore, are also patentable for at least the same reasons.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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